

**A STUDY TO EVALUATE THE EFFECTIVENESS OF  
COMPUTER ASSISTED TEACHING ON THE  
LEVEL OF KNOWLEDGE REGARDING THE  
EFFECTS OF JUNK FOODS ON HEALTH AMONG  
ADOLESCENT CHILDREN IN A SELECTED  
SCHOOL , ERODE DISTRICT.**

**BY**

**301317102**



**A DISSERTATION SUBMITTED TO THE TAMILNADU  
Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI, IN  
PARTIAL FULFILMENT OF THE REQUIREMENT FOR  
THE AWARD OF THE DEGREE OF  
MASTER OF SCIENCE IN NURSING  
OCTOBER – 2015**

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CHILDREN IN A SELECTED SCHOOL AT ERODE**

**By**

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**Clinical Speciality Guide: -----**

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**SUBMITTED IN PARTIAL FULFILMENT OF THE  
REQUIREMENT FOR THE AWARD OF THE DEGREE OF  
MASTER OF SCIENCE IN NURSING FROM THE TAMILNADU  
Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI.**

**OCTOBER – 2015**

## **DECLARATION**

I hereby declare that the present dissertation titled **“A STUDY TO EVALUATE THE EFFECTIVENESS OF COMPUTER ASSISTED TEACHING ON THE LEVEL OF KNOWLEDGE REGARDING THE EFFECTS OF JUNK FOODS ON HEALTH AMONG ADOLESCENT CHILDREN IN A SELECTED SCHOOL AT ERODE.**

Outcome of the original research work undertaken and carried out by me, under the Guidance of Research and Clinical Specialty Guide Prof. **Mrs.M.KAVIMANI, R.N, R.M, M.S.N.,(PhD.,)**Principal, Shivparvathi Mandradiar Institute of Health Sciences, College of Nursing. I also declare that the material of this has not found in any way, the basis for the award of any degree diploma in this University or any other University.

**By**

**301317102**



**CERTIFIED THAT THIS IS THE BONAFIDE WORK OF  
301317102**

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*(Psalms 94:22)*

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## **LIST OF ABBREVIATIONS**

<b>SHORT FORMS</b>	<b>ABBREVIATION</b>
------------------------	---------------------



SPMIHS	Shivparvathi Mandradiar Institute of Health Sciences
CAT	Computer Assisted Teaching
H1	Research Hypothesis
MSC (N)	Master of Science in Nursing
P	Probability
F	Frequency
%	Percentage
$\chi^2$	Chi-square test
SD	Standard Deviation
NS	Non Significant
MD	Mean Difference
SPSS	Statistical Package for Social Sciences

ANOVA	Analysis of Variance
WHO	World Health Organization
FDA	Food and Drug Administration
AAP	American Academy of Pediatrics

## **ABSTRACT**

A study to evaluate the effectiveness of computer assisted teaching on the level of knowledge regarding the effects of junk foods on health among the adolescent children in a selected school at Erode Tamilnadu was undertaken by 301317102 as a partial fulfillment of the requirement for the degree of Master Of Science in Nursing at Shivparvathi Mandradiar Institute of Health Science, under the Tamilnadu Dr.MGR Medical University during the year 2013-2015.

The objectives of the study were

1. To assess the pre and post test level of knowledge regarding the effects of junk foods on health among adolescent children in selected school.
2. To evaluate the effectiveness of computer assisted teaching on the effects of junk foods on health in terms of gaining knowledge among adolescent children in selected school.

3. To find out the association between the post test level of knowledge regarding the effects of junk foods on health among adolescent children and their selected demographic variables.

The research hypotheses formulated were

**H<sub>1</sub>.** There is a significant difference between the pre test and post test level of knowledge regarding the effects of junk foods on health among adolescent children.

**H<sub>2</sub>.** There is a significant association between the post test levels of knowledge regarding the effects of junk foods on health among adolescent children with their selected demographic variables.

Extensive literature review was done for the present study and the reviews were presented in the following headings, Studies related to changing trends in adolescent children eating pattern, Studies related to factors influencing junk foods, Studies related to prevalence of junk foods consumption and effects of junk foods on health among adolescent children, Studies related to the effectiveness of teaching programme on effects of junks food on health among adolescent children.

The conceptual framework adopted for the present study was based on Betralanff's theory (1968) the general system theory. This theory helped the investigator to assess the effectiveness of computer assisted teaching regarding Effects of junk foods on health among Adolescent children education students.

The research design selected for the present study was pre experimental study to evaluate the effectiveness of computer assisted teaching regarding Effects of junk foods on health among Adolescent children. The independent variable was computer assisted teaching on Effects of junk foods and the dependent variable was knowledge regarding Effects of junk foods on health.

The investigator developed a structured questionnaire as a tool for the present study. The content validity of the tool was established by 5 experts. The reliability of the tool was ascertained by test retest method reliability co efficient was  $r=0.9$  and the tool was found to be reliable for the study. Pilot study was conducted in Navarasam Matriculation Higher Secondary school Palliyuthu at Erode District among 10 adolescent children, who fulfilled the sample selection criteria. The study was found to be feasible.

The main study was conducted in Kongu Kalvi Nilayam, Erode District. Prior permission from the authorities was sought and obtained. Non probability convenience sampling technique was used to select the samples and informed consent was obtained. Pretest was done to assess the

knowledge of effects of junk foods on health and the computer assisted teaching was administered. After seven days of the computer assisted teaching post test was done. The data gathered were analyzed and interpreted manually. A probability of  $P < 0.05$  level of significance was considered significant.

## **CHAPTER II**

### **REVIEW OF LITERATURE**

Review of literature is a written summary of the study conducted previously study topic. The review of literature is defined as a broad, comprehensive in depth, systematic and critical review of scholarly publication, unpublished scholarly print materials, audiovisual materials and personal communication.

***-BT***

***Basavanthappa***

The literature review serves to guide the researchers in discussing the results of the study in terms of agreement or non-agreement with other studies.

**IN THIS STUDY, REVIEW OF LITERATURE WERE CLASSIFIED UNDER THE FOLLOWING HEADINGS**

- ❖ Studies related to changing trends in adolescents eating pattern.
- ❖ Studies related to factors influencing junk foods.
- ❖ Studies related to prevalence of junk food consumption and effects of junk foods on health among adolescents.
- ❖ Studies related to the effectiveness of teaching programme on effects of junk foods among adolescents.

## 1. STUDIES RELATED TO CHANGING TRENDS IN ADOLESCENTS EATING PATTERN

*Sonoo Ranjana et-al(2013)* conducted a descriptive study to appraise and understand eating behavior of secondary school adolescents at 12-19 yrs of age in Mauritius. The data was collected randomly from a representative sample n=384 of adolescents through a self- administered questionnaire. The SPSS 16.0 was used to compute all relevant descriptive statistic and test hypothesis as well. 4-point likert scale was used popularity score was calculated. A Chi- square test of independence revealed that the frequency of fast food consumption was significantly higher in adolescents from low income group. The results revealed that 84% of the adolescents snacked in between meals. This study concluded that fast food intake was more common among adolescents from low income group who may be consuming road-side fast food that are cheaper.

*Alphonsus NOnyiriuka et-al(2013)* Conducted a school- based- cross – sectional study. The purpose of the study was to describe the eating habits of adolescent urban secondary schoolgirls in Benin City , N igeria. Data were obtained on the eating pattern and habits of adolescents urban public school girls, aged 12-19 yrs, using a structured anonymous-self-administered questionnaire. Total study population in the 2 schools was 2166 of which 2097(97%) students Participated in study. Data were entered directly from the pre- coded questionnaire. Statistical analysis was performed using the SPSS for Window version 15.0. The result revealed



that frequency of skipping meals was 30%,50% and 59% among participants less than 14 yrs old,14-16yrs old and above 16 yrs old respectively ( $p<0.001$ ). Only 15% of the participants consumed fruits and vegetables daily. Sixty percent of the participants consumed fast food with 76% of them consuming fast food along with soft drinks. The study concluded that Meal skipping, consumption of fast foods along with soft drinks and low consumption of fruits and vegetables were the main eating habits displayed by adolescents urban schoolgirls in Benin City, Nigeria.

*Nora A. ALFaris et-al(2010)* conducted a cross- sectional study of 13-18 yrs adolescent living in Riyadh. The purpose of the study was to examine the trends of fast food consumption among adolescents. They selected 127 adolescents girls and Twenty four- hour diet recall and face –to –face interview food questionnaire were performed. Weight, height, waist circumference and hip circumference were measured using standardized methods .Among study participants, 95.45% consume restaurants fast food and 79.1% eat fast food at least once weekly. Burgers and carbonated soft drinks were the main kinds of fast food meals and beverages usually eaten by girls . SPSS INC, Chicago, IL,USA version 21 was used for data analysis. Categorical variable were expressed as numbers and percentage and were analyzed using a Chi-Square test. Finally, international restaurants were preferable by participants to buy fast food compared with local restaurants (70.9% vs 29.15%).The study concluded that evidence on the high prevalence of fast food consumption among Saudi girl, suggesting an urgent need for community –based nutrition intervention that consider the

trends of fast food consumption and targeted eating behaviors of adolescent and young adult girls.

***Lakhwinder Kaur et-al(2009)*** Conducted a co relational study with an objective of assessing the association between the eating pattern and body mass index among adolescents of 12 -19 yrs in 2007 at Guru Nanak Public Senior Secondary school in Dhahan Kaleran. Through systematic random sampling technique 120 subjects were selected. Interview schedule was used for collecting the data. BMI was calculated using anthropometric measurement. Finding revealed that 57% adolescents had normal BMI. A positive association between eating pattern and BMI was found  $\chi^2=5.9, df=2, p=0.01$ . The study concluded that trends in adolescents eating pattern shows a great concern with regard to the prevalence of obesity.

***Moy Foong Ming et-al (2006)*** did a cross- sectional study with a multi-stage sampling conducted at primary and secondary schools in Kuala Lumpur. A total of 3620 school children studying in primary, secondary , and secondary 4 were selected .The students were surveyed using a pre-tested questionnaire while their weight and heights were measured in the field. The data was entered and analyzed using SPSS10.0 window version. The chi-square test and student's 't' test were used for categorical and continuous data respectively. The results was found that 19.9% skipped at least one meal a day with the youngest group having the lowest prevalence. The most frequent missed meal was breakfast 12.6% followed by

lunch(6.7%) and dinner(4.4%) .Fast food and local hawker food were also consumed by about 60-70% of the students. The study concluded that Multivariate Logistic regression analysis showed that skipping of breakfast is significantly associated with age, sex, BMI and taking of nutritional supplements.

## **2. STUDIES RELATED TO FACTORS INFLUENCING JUNK FOODS**

***DR.Naheedvaida(2013)***Done a study to assess the prevalence of fast food intake among urban students in the age group of 14-19 years in Srinagar. Selected sample of 80 urban adolescent student were randomly selected in the target area .A structured questionnaire was administered and interviews were carried out on the students in different schools and colleges in Srinagar to gather data related to the subject. The data was further statistically analyzed by presenting the information through percentages, mean, standard deviation, coefficient of variation. Study results showed that sex and economic status were found to be the chief variable in fast food consumption and girls were leading in former and also adolescent students studying in private schools were up in the latter. On the other hand, flavor, variety, brand, fast service, and availability were found main driving force in fast food intake. . Also exposure to advertisements, media influence and urbanization were found to be the chief factors of fast food intake.

**Hyun –sun Seo et- al(2011)** examined the current fast food consumption status among middle school students and explored factors influencing fast

food consumption by applying Theory of Planned Behavior. A total of 354 students were recruited from a middle school. The subjects completed a pre-tested questionnaire. The average monthly frequency of fast food consumption was 4.05. As expected, fast food consumption was considered to be a special event rather than part of an everyday diet, closely associated with meeting friends or celebrating most likely with friends, special days. Multiple regression analyses showed that fast food consumption behavior was significantly related to behavioral intention ( $b=0.56, P<0.001$ ) and perceived behavioral control ( $b=0.19, P<0.001$ ). Further analysis showed that behavioral intention was significantly related to subjective norm ( $b=0.15, P<0.01$ ) and perceived behavioral control ( $b=0.56, P<0.001$ ). All statistical analyses were conducted with SPSS 12.0. Simple statistics such as frequency, means and standard deviations were used along with t-test and  $\chi^2$  tests. A Pearson correlation test was conducted to examine the relationship between factors of the TPB (Theory of Planned Behavior) and fast food use. The study concluded that further studies should examine effective ways of changing subjective norms and possible alternatives to fast food consumption for students to alter perceived behavioral control.

***Silvia Hope et al (2010)*** conducted a cross sectional study to provide locally specific evidence around the exposure, awareness and effect of junk food advertising and promotion to children and adolescents in Fiji. The study had a total of 88 primary school students and 103 secondary school students from a high school in Suva, Fiji. The data was collected by questionnaire. A combination of Epi data and Microsoft Excel were used in analysis. Statistical significance was determined using a chi square test. The results

revealed that the secondary school participants were statistically more likely to watch television on more days of the week than primary school participants. The study concluded that children and adolescents in Suva are being exposed to and affected by the junk food advertisements which are abundant in their daily environment.

*Massimo Santinello et al(2009)* conducted a cross sectional survey among adolescents between 11 and 16 yrs in Belgium Flanders & the Veneto region of Italy. The purpose of the study was focus on several lifestyle behaviors and family rules as determinant of soft drink consumption were limited to adolescents. Sample of 14407 adolescents were selected .A questionnaire survey was done to collect data. SPSS version 14.0 was used for analyses .Chi- square tests were performed to determine country and gender differences. Binary logistic regression was used to test the association between soft drink consumption and food related life style. The results revealed that each independent variables was significantly associated with daily soft drink consumption, despite some sub-groups exception. These findings suggested that considering gender and cultural differences, involving parents and limiting the adolescent's exposure to television would increase the effectiveness of interventions aimed to reduce soft drink consumption in adolescence.

### **3. STUDIES RELATED TO PREVALENCE OF JUNK FOOD CONSUMPTION AND EFFECTS OF JUNK FOOD ON HEALTH**

**Robert J Hancox et- a l(2014)** conducted a multi country cross- sectional study on adolescents aged 13-14 yrs. The study selected 72,900 children in 17 countries and 1,99,135 adolescents in 36 countries).A questionnaire was used to collect data. A general linear mixed model was used to determine the association between BMI and fast food consumption, adjusting for Gross National Income per capita by country, measurement type age and sex. Frequent and very frequent fast- food consumption was reported in 23% and 4% of children, and 39% and 13% of adolescent respectively. The study concluded that fast-food consumption was high in childhood and increased in adolescence.

**Lt col Mercy Antony et-al(2013)**the study was a cross sectional descriptive study using survey method with a sample size of 208 teenagers between the age group 13 years to 17 years from four English medium school in pune district of Maharashtra India. The aim of the study to assess the prevalence of junk food consumption and knowledge of adolescents regarding its ill effects and also factors contributing towards this public health concern. Samples were selected by sampling and data was collected using structured questionnaire. Socio demographic variables were analyzed using descriptive statistic and associated between variables were elucidated using chi square, ANOVA and Mann Whitney U test. The results revealed that out of 66.8% who consumed junk food, 50% of teenagers consumed junk food 3-5 times and 1-3 bottles of aerated drinks per week. 46.15% teenagers had average knowledge about ill effects of junk food. The study concluded that the general awareness of teenagers regarding ill effects of junk food was relatively average or good . There are various factors which

lure the young adult to consume junk food which invites attention from parents, school authorities and legislative bodies.

***Hanan A. Alfawaz(2012)*** conducted a descriptive, questionnaire-based, cross sectional study. The purpose of the study was to study the relationship between fast food and Body Mass Index and the pattern of consumption of fast food among female university students. Total of 141 female students aged 18 to 26 yrs from different study levels of Nutrition and Food Science Department, King Saudi University, Riyadh Saudi Arabia were included. A survey questionnaire which contains three section was used. Data were analyzed by using SPSS VERSION 12. Descriptive data was obtained for all the parameters tested as percentage. For a comparison of categorical variables, Chi-Square, Pearson correlation tests and one way ANOVA test were used. The result revealed that overweight and obesity were present in 25% of female students. Fast food consumption frequency of 1-2 times per week was high among them (74.5%). The study concluded that significant ( $p < 0.05$ ) positive fast food is unhealthy.

***Farzaneh Montazerifar et-al(2012)*** conducted a cross- sectional, descriptive study with an objective to suggests a relationship between lifestyle and diet related risk factor among adolescent girls in Sisten& Baluchistan Province, Iran. Totally 753 high school girls aged 14-18 years enrolled by a cluster random sampling method. Dietary intake and food

habits were evaluated by a two-day -24 hrs dietary recall, and a food frequency questionnaire (FFQ). Data were analyzed by SPSS , VERSION 11.5,,SPSS INC ,Chicago IL The evaluation of eventual significant differences was carried out by one sample t-test . The result revealed that intake of nutrients and food pattern of adolescents girls were found to be lower. The study concluded that consuming insufficient diet during this time can lead to stop or slow growth and unsuitable food pattern also results in diet –related chronic diseases in adolescents and adulthood.

***Mohammad Hossein Rouhani et- al(2012)*** A cross- sectional study was done to determine the association between fast food consumption and diet quality as well as obesity among Isfahanian adolescent girls in Iran. The 140 samples were selected by the use of systemic cluster random sampling. Dietary intakes were assessed using a validated food frequency question. SPSS software (version12) was used to conduct the statistical analysis. Normal distribution was evaluated by Kolmogorov- Smirnov test, histogram graph, p-p plot graph. The results revealed that the high intake of fast food were significantly associated with overweight. The study concluded that the fast food consumption was associated with poor diet quality and high prevalence of overweight among Isfashani adolescents.

***Camilla chermont P.Estima el-al(2011)*** conducted a cross- sectional study to evaluate the consumption of beverage and soft drinks by adolescents of a public school in Sao Paulo, Brazil. They selected 71 adolescents aged between 14 to17 yrs from both genders. Data was collected by questionnaire. Data analysis was carried out in the SPSS 13.0 Software environment. Frequency was calculated and the Chi-Square test was used



for group comparison. The results revealed that the most frequent consumed beverage was industrialized fruit juice (38.1% ),soft drinks(28.6%), and natural fruit juices (22.2%), and main place were home(38.2%),school(22.1%).The study concluded that sweet beverage intake was frequent among adolescents specially soft drinks were consumed at home and at school. The nutrition education program should aim to stimulate the intake of more healthy beverages by adolescents

*Shanthy A. Bowman et-al (2004)* conducted a study to test the hypothesis that fat food consumption adversely affects dietary factors linked to obesity risk. The study selected 6212 children and adolescents of 4 to19 yrs in United States. Survey was done to collect the data .The SUDAAN software package was used for regression analysis and for the estimation of percentages, mean, standard errors of the mean and pairwise comparisons among groups. The result revealed that 30.3%of total samples were consuming fast food. Fast –food consumption was highly prevalent in both genders,all racial/ethnic groups and all region of the country. The study concluded that consumption of fast food among children in the United States seems to have an adverse effect on dietary in ways that plausibly could increase risk for obesity.

#### **4. STUDIES RELATED TO THE EFFECTIVENESS OF TEACHING PROGRAM ME ON EFFECTS OF JUNK FOODS AMONG ADOLESCENTS**

***Mandeep Kaur (2014)*** did a quasi-experimental study on adolescents of 11 to 18 years of age in Delhi to determine the effectiveness of planned teaching programme on knowledge regarding health hazards of junk foods. The study comprised of 100 adolescents selected through purposive sample method. The data collection was done with self-administered questionnaire. Inferential statistics and descriptive statistics were used to analyze the data. The results showed that the mean pretest score was 9.95 and mean post test score was 18.50 the mean difference between the pretest knowledge score and post test knowledge score was 8.55. The study concluded that planned teaching programme was effective in order to increase the knowledge of the adolescents.

***Vandana Sharma(2013)*** conducted a pre- experimental study. The purpose of the study was to assess the effectiveness of structured teaching program on knowledge regarding harmful effects of junk food among adolescents at Jalandhar, Punjab. Total of 60 adolescents were selected by non-probability convenience sampling technique. The pre-test was taken by using self-structured questionnaire followed by structured teaching programme .After 7 days post –test was taken. The mean percentage of the knowledge score of post test (22.88) was higher than pre test (12.96). The ‘t’ value for total pre test and post test was 16.76. The difference between pre- test knowledge score and post test knowledge score was 9.92. It means that the knowledge score was increased after structured teaching programme .The finding of the study revealed that the education had a vital role in improving the knowledge of adolescents regarding effects of junk food.

***SupinyaIn -Iw et-al(2012)*** Conducted a prospective cohort and randomized controlled trial. The purpose of the study was to determine the Change in body weight and body mass index, as well as diet behaviors at 4 months after intervention between experimental and control group obese adolescent girls who participated in school based nutritional education program me in Thailand. The study recruited 49 obese girls from a secondary school. Those adolescents were randomized into 2 groups of intervention and control. The intensive interactive nutritional programe was provided to the intervention group. Weight , height , dietary record and percentage fat consumption, as well as self- administered questionnaires on healthy diet attitudes were collected at baseline and 4-months follow-up, and then compared between two groups. The statistical analyses of differences between groups were demonstrated using paired t test and Mc Nemar's test. The analyses were performed using SPSS for Window, release 11.5.(SPSS Chicago, IL). The result revealed that there was a statistically significant changes of BMI in the intervention group by  $0.53 \pm 1.61 \text{ kg/m}^2$  ( $p=0.016$ ) compared to the control group ( $0.51 \pm 1.57 \text{ kg/m}^2$ ,  $p=0.063$ ) but no significant change in calorie and % fat consumption between group. The study concluded that interactive and intensive nutritional education program as shown in the study was one of the most successful school- based interventions for obese adolescents.

***Puri et-al(2007)*** studied to assess the impact of a diet and nutrition related education package on the awareness and practice of children of Chandigarh. The study selected 904 class IX OR XII School going

adolescents. . The students were interviewed regarding their dietary intake and eating habits. The total caloric intake was measured by 24 hrs recall method. Anemia was assessed by clinical examination. After imparting health education training and intervention the schools were revisited one month later. The adolescents were also assessed for their knowledge about balanced diet pattern. The data was collected compiled and analyzed using SPSS package and epi info version. The results revealed that the health education increased the awareness about balanced diet from 42.2%to 82.2%.Awareness about poor diet causes of anemia increased from 29.8% to58.1%. The educational intervention increased the knowledge about causes of malnutrition from 23.5% to 88.1%. Over all there was a significant increase in the level of knowledge regarding various nutrients and its source was observed as a result of intervention.

## **CHAPTER-III**

### **RESEARCH METHODOLOGY**

This chapter deals with the description of the research methodology adopted by the investigator to assess the effectiveness of health teaching on effects of junk foods on health among adolescent children in a selected school, Erode.

Methodology is the most important part of any research study, which enables the researcher to form a blue print for the study undertaken.. Research methodology refers to the controlled investigations related to the ways of obtaining, organizing and analyzing data. Methodological studies address the development, validation and evaluation of research instrument & techniques.

The steps which were undertaken to conduct the study include research setting, population, sample and sampling technique, development and description of tool, procedure and technique of data Collection, pilot study and a plan for data analysis.

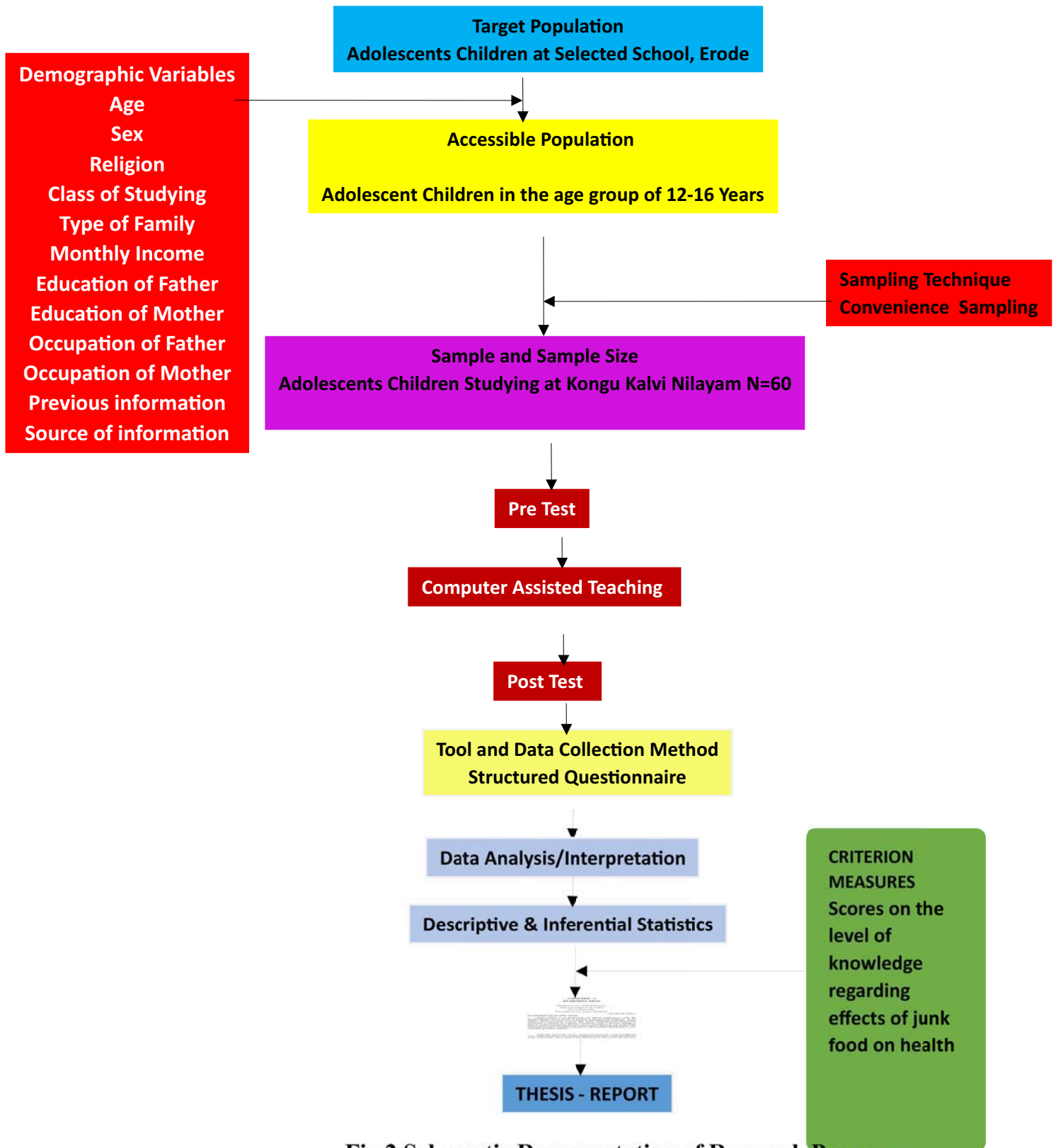
## **RESEARCH APPROACH**

According to **Suresh k. Sharma** (2011) the research approach involves the description of the plan to investigate the phenomenon under study in a quantitative, qualitative or a combination of the two methods. Furthermore, It helps to decide whether the presence or absence as well as manipulation and control over variables. Also, it helps to identify the presence or absence of and comparison between groups.

Research approach is a systematic, controlled empirical and critical investigation of natural phenomena guided by theory and hypothesis about presumed relations among the phenomena. The Research approach used for this study was quantitative evaluative approach.

## **RESEARCH DESIGN**

According to **POLIT and Beck** (2004), research design refers to the overall plan for addressing a research question, including specification for enhancing the integrity of the study, Pre-experimental design one group pre and posttest design was selected to evaluate the effectiveness of computer assisted teaching on knowledge regarding the effects of junk food on health among adolescents in a selected school at Erode.



**Fig.2 Schematic Representation of Research Process**

GROUP	PRE TEST	INTERVENTION	POST TEST
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EXPERIMENTAL GROUP	O <sub>1</sub>	X	O <sub>2</sub>
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The Symbols used are:

O<sub>1</sub>: Pre test; Assessment of knowledge on effects of junk food on health.

X: Intervention: Administration of computer assisted teaching on effects of junk food on health .

O<sub>2</sub>: Post test: Assessment of knowledge after 7 days of computer assisted teaching.

## VARIABLES

According to **Suresh K. Sharma (2011)** variables are qualities, properties or characteristics of person, things or situation that change or vary. Variables are concepts at different level of abstraction that are concisely defined to promote their measurement or manipulation within study.

## INDEPENDENT VARIABLES



Independent variables is the variables which has the presumed effect on the dependent variables.

In this present study the independent variable is computer assisted teaching

## **DEPENDENT VARIABLES**

Dependent variable is often referred to as the consequence or the presumed effect that varies with a change in the Independent variables.

In this present study the dependent variable is knowledge of adolescent children.

## **EXTRANEIOUS VARIABLES**

According to **Sureshk .Sharma** Extaneous variables are the factors which are not the part of the study but may affect the measurement of the study variables. These variables are usually recognized and controlled by researcher.

In the present study it refers to the selected demographic variables such as age, sex, religion, class of studying, type of family, family income, education of the father, education of the mother, occupation of the father, occupation of the mother, previous orientation and source of knowledge.

## **SETTING OF THE STUDY**

According to **polit and Hungler (2004)** ,Research settings are specific places in a research where data collection is to be made. The selection of setting was done on the basis of feasibility of conducting the study. Availability of subject and permission of authorities. The present study was conducted at **Kongu Kalvi Nilayam Matriculation Higher Secondary School, Erode.**

The selection of the setting was done on the basis of Familiarity of the setting, Availability of the required sample. Feasibility of conducting study and

Acquaintance of the investigator with the area and the cooperation from the school.

## **POPULATION**

According to *Polite & Hungler(1995)* A population is an aggregate or totality of all subjects that possess a set of specification .The two type of population is the target population and the accessible population.

### **THE TARGET POPULATION**

It is the entire population in which the researchers are interested and to which they would like to generalize the research findings.

In the study were adolescent children who were studying in selected school at Erode.

### **THE ACCESSIBLE POPULATION**

It is the aggregate of cases that confirm to the designed inclusion and exclusion criteria and that are accessible as subjects of the study.

In the study were adolescent who are studying in Kongu Kalvi Nilayam Matriculation higher secondary school at Erode.

## **SAMPLE**

According to *Polite & Beck (2004)* ,a sample is a subset of population & selected to participate in a research study, it is a portion of the population which represents the entire population.

The sample selected for the present study were the adolescent children studying at Kongu Kalvi Nilayam Matriculation Higher Secondary school Erode, who were willing to participated & present during the period of data collection.

## **SAMPLE SIZE**

According to Polit & Beck (2002) sample size is normally decided by nature of the study, nature of population, type of sampling technique, tool variables, statistical test adopted for data analysis sensitivity of the measures.

In this study the sample size was 60 adolescent children studying in Kongu Kalvi Nilayam Matriculation Higher Secondary school, Erode.

Those who fulfill the inclusion and exclusion criteria and it was arbitrarily decided to be 60.

## **SAMPLING TECHNIQUE**

According to *Manoj Kumar yadav* it means a given number of subjects from a defined population as representative of that population

Sampling is the process of selecting the portion of the population to represent the entire population.

In this study Non Probability convenience sampling technique was used to select the sample

S.NO	AGE	NO OF SAMPLES
1	12 - 13 Years	24
2	13 - 14 Years	21
3	15 - 16 Years	15

### **SAMPLING CRITERIA**

Sampling criteria is that which specifies the characteristics that the sample of the population must possess. The following criteria were used in the present study to select sample.

### **INCLUSION CRITERIA**

1. Adolescent children between the age of 12 to 16 years .
2. Adolescent children who were willing to participate in this study.
3. Adolescent children those who were studying in VIII, IX, X & XI standards.

## **EXCLUSION CRITERIA**

1. Adolescent children who had been exposed to similar teaching previously.
2. Adolescent children were absent during the data collection.

## **SELECTION AND DEVELOPMENT OF TOOL**

### **DEVELOPMENT OF THE TOOL**

The tool is a written device that a researcher uses to collect the data. After careful and detailed review of literature the researcher prepared and developed demographic data and structured questionnaire as a tool for the present study.

The tool is an instrument to assess and collect the data from the respondent of the study, **Polit and Beck(2004)**.

### **Description of the tool**

Description of the tool refers to the explanation of the content of the tool. The researcher listed the number of items and the scoring for each item in the tool. The tool consists of two parts.

### **Section –A**

It consists of demographic characteristics of Adolescents like age, sex, class of studying, religion, type of family, family income, education of the father, education of the mother, occupation of the father, occupation of the mother, source of previous information

### **Section-B**

It consists of structured knowledge questionnaire.

It contains 30 items, each carries 1 mark .The highest score is 30.



## **SCORING PROCEDURE**

<b>S.NO</b>	<b>SCORE</b>	<b>LEVEL OF KNOWLEDGE</b>
1	0 - 10	In Adequate Knowledge
2	11 - 20	Moderately Adequate Knowledge
3	21 - 30	Adequate Knowledge

## **VALIDITY OF THE TOOL**

Validity refers to whether an instrument accurately measure what it is supposed to measure. Content validity represents the universe of content which provides the framework and basis of formulating the items that will adequately represent the content.

The constructed tool along with objectives, blue print and criterion checklist was submitted to three experts in the field of Paediatric Nursing, one in the field of medicine and one expert in the field of Nutrition for content validity. The selection of experts was done based on their experience and clinical expertise. The experts were requested to give their opinion regarding relevancy, accuracy and appropriateness of the items for further modification. Based on the suggestion given by the experts, modification and rearrangement of few items were done.

## **RELIABILITY OF THE TOOL**

Reliability of research instrument is defined as the extent to which the instrument yields the same results on repeated measures. The reliability of a measuring tool can be assessed in the aspects of stability, internal consistency, and equivalence depending on the nature of the instrument and aspects of the reliability concept.

The method adopted for the present study was test-retest method to measure the homogeneity of the tool using Karl Pearson's correlation coefficient formula reliability coefficient was  $r=0.92$  and the tool was found to be statistically reliable for the main study.

## **PILOT STUDY**

Pilot study is a small scale version of the proposed study conducted to refine the methodology. It is conducted similar to the proposed study, using similar subjects, the similar setting, the same treatment, the same data collection and the same analysis technique.

The pilot study was conducted in Navarasam Matriculation Higher Secondary school, Palliyuthu, Erode district in the month of March 2015 to find the feasibility of the study. Ten adolescent children were selected using convenience sampling technique. The subjects for the pilot study possessed the characteristics as that of the sample for the final study, but were not included in the main study. Prior to the study permission was obtained from concerned authority. The selected subjects were informed of the purpose of the study and consent was obtained. Assessment of Knowledge was done by using structured questionnaire. Post- test was conducted using the same structured questionnaire on the seventh day of pre- test and after computer assisted teaching regarding effects of junk food on health. The time taken to complete one questionnaire was 30 minutes. The collected data were analyzed using descriptive and inferential statistics.

After conducting the pilot study, it was found that the study was feasible. The concerned authority and the sample were found to be cooperative, the questionnaire and computer assisted teaching contains information regarding effects of junk food were relevant and the time and cost of the study was within the limit.

## **DATA COLLECTION PROCEDURE**

### **Phase I: Screening Phase**

The study was conducted in Kongu Kalvi Nilayam Matriculation School Erode district. Data were collected for 4 weeks in the month of June 2015, and official permission was obtained from the authorities.

Screening was done with the help of the school teachers working in the particular school to select the samples. Total of 60 students who fulfilled the selection criteria were selected by convenient sampling. To assess each subject it took about 30 minutes.

### **Phase II Data collection and Interpretation Phase**

Before collecting the data, permission was obtained from the concerned authority. Keeping in mind the ethical aspect of research, the data was collected after obtaining the informed consent of the sample. The samples were assured anonymity and confidentiality of information provided by them. The researcher collected the data from the subjects. Pre- test was conducted, followed by conducting computer assisted teaching programme regarding effects of junk food on health. Post –test was conducted to evaluate the effectiveness of computer assisted teaching programme.

### **Phase –III Termination Phase**

The toll was verified for completion . The children were assured about the confidentiality of the data. The children were made comfortable. This phase lasted for a period of 2 minutes per client.

## **PLAN FOR DATA ANALYSIS**

Data analysis is the systematic organization and synthesis of research data and testing of the research hypothesis using that data.

The data collected from the subjects were edited, coded and entered in excel sheet. The data were analyzed and using descriptive and inferential statistics by manual. A probability of less than 0.05 was considered to be significant. The following plan of analysis was developed.

### **Section I**

Data on Description of the subjects with respect to demographic variables was presented in terms of frequency and percentage

.

### **Section II**

Data on Mean, Standard deviation , and Mean difference, Range was used to evaluate the knowledge level of adolescents children regarding effects of junk food on health.

### **Section III**

Data on Statistical significance of the effectiveness of computer assisted teaching was analyzed using Paired 't' test.

### **Section IV**

Data on association between post test score of the adolescent children and the selected background factors were explained by using chi-square(x<sup>2</sup>)

### **ETHICAL CONSIDERATIONS**

For the present study, the investigator took into consideration the ethical values. The study was accepted by the research ethical committee of the college. Prior permission was obtained from the concerned authorities of the school. Purpose of the was explained to the samples and informed written consent was taken. Confidentiality was promised and ensured .The participants were given freedom to quit from study in between if not willing. No routine duties were altered or withheld. No physical or psychological pain was caused.

## <sup>x</sup> **CHAPTER –IV**

### **DATA ANALYSIS AND INTERPRETATION**

Data analysis is the systemic organization and synthesis of research data and the testing of research data and also the testing of hypothesis using data. Interpretation is the adequate exposition of the facts presented in terms of purpose of the study.

This chapter deals with the analysis and Interpretation of the data collected after the computer assisted teaching regarding effects of junk foods on health to the adolescent children studying in Kongu Kalvi Nilayam Matriculation Higher Secondary School, Rangampalayam, Erode District. The data collected were edited, tabulated, analyzed interpreted and the findings obtained were presented in the form of tables and diagrams under the following sections.

## **THE DATA ANALYSIS WERE PRESENTED AS FOLLOWS**

**Section I:** Data on selected demographic variables of adolescent children in experimental group.

**Section II:** Data on pre and post test level of knowledge regarding the effects of junk foods on health among adolescent children.

**Section III:** Data on effectiveness of computer assisted teaching regarding the effects of junk foods on health among adolescent children .

**Section IV:** Data on association between the post test level of knowledge and the selected demographic variables among adolescent children.



**SECTION I: DATA ON SELECTED DEMOGRAPHIC VARIABLES OF ADOLESCENT CHILDREN IN EXPERIMENTAL GROUP**

**TABLE1: FREQUENCY, PERCENTAGE DISTRIBUTION ON DEMOGRAPHIC VARIABLES OF ADOLESCENT CHILDREN**

S.NO	DEMOGRAPHIC VARIABLES	EXPERIMENTAL GROUP	
		FREQUENCY	PERCENTAGE
1	AGE		
	a) 12-13 years	24	40%
	b) 13-14years	21	35%
	c) 14-15years	0	0%
	d) 15-16 years	15	25%
2	GENDER		
	a) Boys	28	46.66%
	b) Girls	32	53.33%
3	Religion		
	a) Hindu	42	70%
	b) Muslim	8	13.3%
	c) Christian	10	16.6%
	d) Others	0	0
4	Class of studying		
	a) 8 <sup>th</sup> standard	24	40%
	b) 9 <sup>th</sup> standard	21	35%
	c) 10 <sup>th</sup> standard	0	0%
	d) 11 <sup>th</sup> standard	15	25%
5	Type of family		
	a) Joint family	55	91.6%

	b) Nuclear family c) Extended family	5 0	8.3% 0%
6	Monthly income in Rupees a) Below Rs 5000 b) Rs 5000 to Rs 10000 c) Rs 10000 to Rs 12000 d) Above Rs 15000	0 15 25 20	0% 25% 41.6% 33.3%
7	Education of the Father a) Illiterate b) Primary school education c) Secondary school education d) Graduate and above	3 19 21 17	5% 31.6% 35% 28.3%
8	Education of the Mother a) Illiterate b) Primary school education c) Secondary school education d) Graduate and above	5 24 20 11	8.3% 40% 33.3% 18.3%
9	Occupation Of the Father a) Govt.Job b) Private Job c) Business d) Coolie	7 38 9 6	11.6% 63.3% 15% 10%

10	Occupation Of the Mother		
	a) Govt.Job	2	3.3%
	b) Private Job	19	31.6%
	c) Business	10	16.6%
	d) Coolie	29	48.3%
11	Do you know about the effects of junk food on health previously?		
	a) Yes	9	15%
	b) No	51	85%
12	If yes, source of information		
	a) Mass media	5	8.3%
	b) Friends	6	6.6%
	c) Health care professionals	4	0%
	d) Others	0	0%
		0	

**Table No 1 : Shows the frequency and percentage distribution of demographic variables of adolescent children.**

**Regarding Age** majority of the respondents i.e 24(40%) were in the age group of 12-13 years 21 (35%) were in the age group of 13-14 years and the least 15(25%) were in the age group of 15-16 years and none were in 14-15 years of age group.

**Regarding Gender** majority of them 32(53.3%) were girls and 28 (46.6%) of them were boys.

**Regarding Religion** majority 42(70%) were Hindus,10(16.6%) were Christians , only 8(13.3%) were Muslims, and no one belong to other religion.

**Regarding Class of studying** majority of them 24(40%) were studying in 8<sup>th</sup> standard, 21(35%) were studying in 9<sup>th</sup> standard, and the least 15(25%) were in 11<sup>th</sup> standard and none of them were in 10<sup>th</sup> standard.

**Regarding Type of family** majority 55(91.6%) were living in nuclear family,5(8.3%) were living in joint family and no one belongs to extended family.

**Regarding Monthly Income** majority of them 25(41.6%) were getting monthly salary between Rs10,000- 12,000,20(33.3%) were getting monthly salary above Rs15,000,15(25%) were earning between Rs 5000-10,000 and no one is getting below Rs 5000

**Regarding Education of the father** majority 21(35%) had completed their secondary school education, 19(31.6%) had completed their primary school education, 17(28.3%) of them graduate and only 3(5%) were illiterate.

**Regarding Education of the mother** majority 24(40%) had completed their primary school education, 20(33.3%) had completed their secondary school education,11(18.3%)of them graduate and only 5(8.3%) were illiterate.

**Regarding occupation of the father** majority 38(63.3%) were working in private job,9(15%) were doing Business, 7(11.6%) were in Government job and 6(10%) were working as a collie.

**Regarding occupation of the mother** majority 29(48.3%) were house wives 19(31.6%) were in private job ,10(16.6%) were involved in Business and only 2(3.3%) were doing Government job.

**Regarding the previous knowledge on effects of junk food on health** majority 51(85%) did not know about effects of junk food on health,9(15%) had known about effects of junk food on health.

**Regarding source of information** majority 5(8.3%) were known about junk food through Mass media, 4(6.6%) were come to know through friends and none of them were known through Health care professionals and others.

It was inferred that among 60 participants, majority 24(40%)were in the age group between 12-13 years,32(53.3%) were girls,42(70%) were Hindus ,24(40%) were studying 8<sup>th</sup> standard,55(91.6%) were living in nuclear family,25(41.6%) of their family monthly income was between Rs 10,000-12,000, 21(35%) of their fathers were completed secondary school education,24(40%) of their mothers had completed primary school education,38(63.3%)of their fathers were working in private , 29(48.3%) of their mothers were house wives.

**SECTION II: DATA ON PRE AND POST TEST LEVEL OF KNOWLEDGE  
REGARDING THE EFFECTS OF JUNK FOODS ON HEALTH AMONG  
ADOLESCENT CHILDREN**

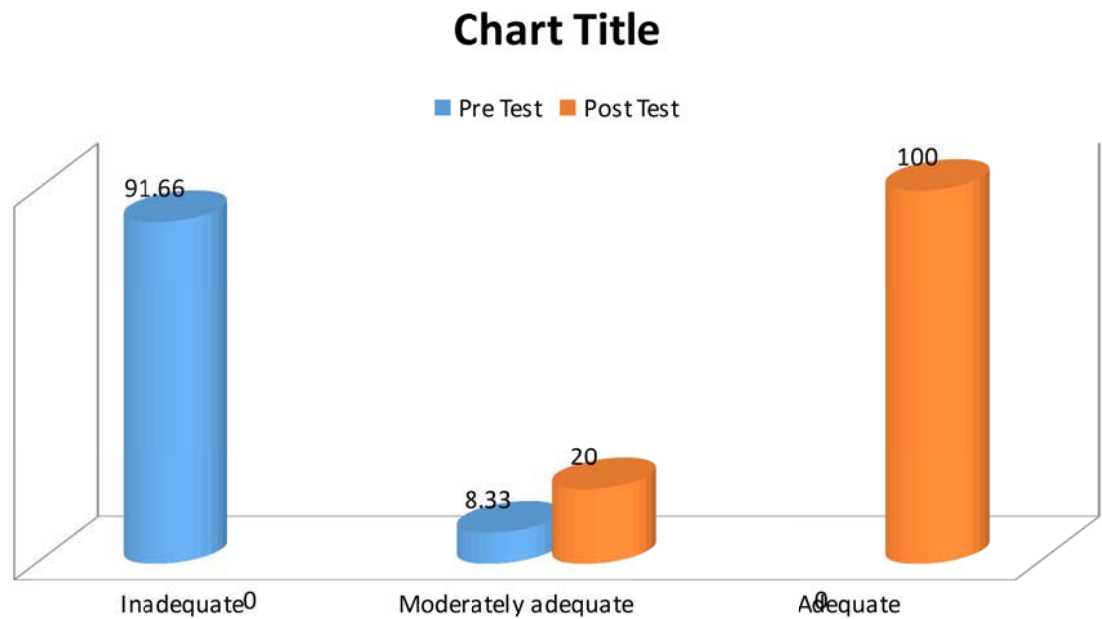
**TABLE 2: FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRE  
AND POST TEST LEVEL OF KNOWLEDGE REGARDING THE  
EFFECTS OF JUNK FOODS ON HEALTH AMONG ADOLESCENT  
CHILDREN**

**N= 60**

<b>Level of knowledge</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Frequency</b>	<b>Percentage</b>
Inadequate	55	91.66%	0	0%
Moderately Adequate	5	8.33%	12	20%
Adequate	0	0%	48	80%
Total	60	100%	60	100%

**Table 2: shows the frequency and percentage distribution of pre and post test level of knowledge regarding the effects of junk foods on health among adolescent children**

**Fig 3. FREQUENCY AND PERCENTAGE DISTRIBUTION OF PRE AND POST TEST LEVEL OF KNOWLEDGE REGARDING THE EFFECTS OF JUNK FOODS ON HEALTH AMONG ADOLESCENT CHILDREN**



**Fig 3. Shows the Frequency and Percentage distribution of Pre and Post test level of knowledge regarding the effects of junk foods on health among adolescent**

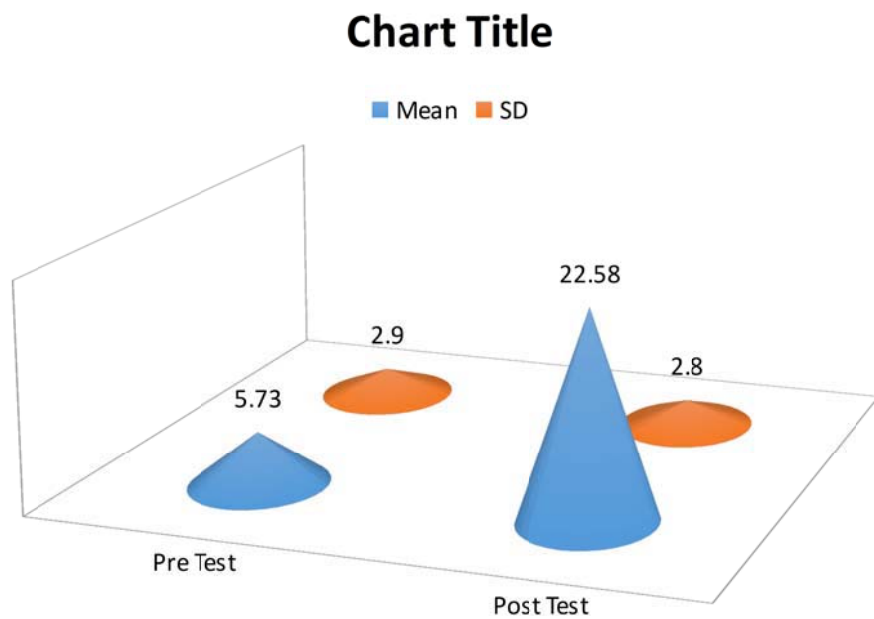
It was inferred that among 60 participants 55(91.66%) had inadequate knowledge and 5(8.33%) had moderately adequate knowledge and none of them had adequate knowledge. The post test was conducted after administration of computer assisted teaching regarding effects of junk food on health among adolescent children. On the seventh day post test was conducted by using the same questionnaire. The post test knowledge scores showed a significant difference. Majority of them 48(80%) gained adequate knowledge and 12(20%) gained moderately adequate knowledge which showed that computer assisted teaching regarding effects of junk food on health among adolescent children was effective.

### **SECTION III: DATA ON EFFECTIVENESS OF COMPUTER ASSISTED TEACHING REGARDING THE EFFECTS OF JUNK FOODS ON HEALTH AMONG ADOLESCENT CHILDREN**



<b>S.NO</b>	<b>Experimental group</b>	<b>Mean</b>	<b>SD</b>
1	Pre test	5.73	2.9
2.	Post test	22.58	2.8

**FIGURE 4: THE MEAN AND STANDARD DEVIATION OF PRE AND POST TEST LEVEL OF KNOWLEDGE SCORES**



**Fig 4. Shows the mean and standard deviation of pre test and post test level of knowledge scores**

The obtained overall pre test mean score was 5.73,SD 2.9 and in post test over all mean score was 22.58, SD 2.8

**TABLE 3: MEAN, STANDARD DEVIATION, RANGE, 't' VALUE REGARDING LEVEL OF KNOWLEDGE ON EFFECTS OF JUNK FOODS ON HEALTH AMONG ADOLESCENT CHILDREN BEFORE**

**AND AFTER ADMINISTRATION OF COMPUTER ASSISTED  
TEACHING ON EFFECTS OF JUNK FOODS ON HEALTH**

S.NO	EXPERIMENTAL GROUP	MEAN	MEAN PERCENT AGE	SD	RANGE	MEAN DIFFERENCE	't' value
1	Pre test	5.73	9.55%	2.9	2-14(12)	16.85	29.6
2	Post test	22.58	37.63%	2.8	20-28(8)		df=119 P<0.05 S

S= significant

**Table 3: Shows the Mean, Standard deviation, Range, Mean difference and paired 't' value level of knowledge regarding the effects of junk foods on health among adolescent children.**

The obtained pre test over all mean score was 5.73, SD 2.9, Mean percentage was 9.55% and range was 12. The obtained post test over all mean score was 22.58, SD was 2.8, Mean percentage was 37.63% and range was 8. The mean difference between the pre test and post test score was 16.85 and the obtained 't' value 29.6 was significant at  $P < 0.05$  level.

It was evident that compared to pre test knowledge score there is significant increase in the post test knowledge scores. Hence the research Hypothesis (H1) is accepted. Therefore it can be interpreted that the computer assisted teaching was

effective in improving the knowledge of adolescent children regarding effects of junk foods on health.

#### **SECTION IV: DATA ON ASSOCIATION BETWEEN THE POST TEST LEVEL OF KNOWLEDGE AND THE SELECTED DEMOGRAPHIC VARIABLES AMONG ADOLESCENT CHILDREN**

**TABLE 4: FREQUENCY, PERCENTAGE DISTRIBUTION AND CHI SQUARE ASSOCIATION BETWEEN THE POST TEST LEVEL OF KNOWLEDGE AND THEIR SELECTED DEMOGRAPHIC VARIABLES OF ADOLESCENT CHILDREN**

S.NO	DEMOGRAPHIC VARIABLES	EXPERIMENTAL GROUP		
		f	%	$\chi^2$
1	AGE			
	e) 12-13 years	24	40%	$\chi^2=10.71$ Df=6 P>0.05  NS
	f) 13-14 years	21	35%	
	g) 14-15 years	0	0%	
	h) 15-16 years	15	25%	
2	GENDER			
	c) Boys	28	46.66%	$\chi^2=2.81$ Df=2 P>0.05  NS
	d) Girls	32	53.33%	
3	Religion			
	e) Hindu	42	70%	$\chi^2=0.85$ Df= 6 P>0.05  NS
	f) Muslim	8	13.3%	
	g) Christian	10	16.6%	
	h) Others	0	0	
4	Class of studying			

	c) 8 <sup>th</sup> standard d) 9 <sup>th</sup> standard c) 10 <sup>th</sup> standard d) 11 <sup>th</sup> standard	24 21 0 15	40% 35% 0% 25%	$\chi^2 = 6.24$ Df=6 P>0.05 NS
5	Type of family d) Joint family e) Nuclear family f) Extended family	55 5 0	91.6% 8.3% 0%	$\chi^2 = 0$ Df=4 P>0.05 NS
6	Monthly income in Rupees e) Below Rs 5000 f) Rs 5000 to Rs 10000 g) Rs 10000 to Rs 12000 h) Above Rs 15000	0 15 25 20	0% 25% 41.6% 33.3%	$\chi^2 = 0.35$ Df=6 P>0.05 NS
7	Education of the Father e) Illiterate f) Primary school education g) Secondary school education	3 19 21	5% 31.6% 35%	$\chi^2 = 1.22$ Df=6 P>0.05 NS

	h) Graduate and above	17	28.3%	
8	Education of the Mother e) Illiterate f) Primary school education g) Secondary school education h) Graduate and above	5 24  20 11	8.3% 40%  33.3% 18.3%	$\chi^2 = 1.22$ Df=6 P>0.05 NS
9	Occupation Of the Father e) Govt.Job f) Private Job g) Business h) Coolie	7 38 9 6	11.6% 63.3% 15% 10%	$\chi^2 = 0.2$ Df=6 P>0.05 NS
10	Occupation Of the Mother a) Govt.Job b) Private Job c) Business d) Coolie	2 19 10 29	3.3% 31.6% 16.6% 48.3%	$\chi^2 = 2.48$ Df=6 P>0.05 NS

11	Do you know about the effects of junk food on health previously? c) Yes d) No	9 51	15% 85%	$\chi^2 = 0.02$ Df=2 P>0.05 NS
12	If yes, source of information e) Mass media f) Friends g) Health care professionals h) Others	5 4 0 0	8.3% 6.6% 0% 0%	$\chi^2 = 0.63$ Df=6 P>0.05 NS

S-Significant, NS- Not significant

**Table 4 shows the frequency, percentage distribution and chi square association between the post test level of knowledge and their selected demographic variables of adolescent children.**

It was inferred that the selected demographic variables such as Age, Gender, Religion, Class of studying, Type of family, Monthly income, Education of the father, Education of the mother, occupation of the father, occupation of the mother, were not significant with the post test level of knowledge at  $P>0.05$ . Hence the Hypothesis 2 was accepted.





## **CHAPTER- V**

### **SUMMARY, FINDINGS, DISCUSSION, IMPLICATIONS, LIMITATIONS, RECOMMENDATIONS, AND CONCLUSION**

This chapter deals with summary, findings, discussion, implications, limitations, recommendations, and conclusion. The essence of any research project is based on study , findings, , limitations, interpretation, of the research results and recommendations to incorporate the study implications. It also gives meaning to the results obtained in the study.

#### **SUMMARY**

The main aim of the study was to evaluate the effectiveness of computer assisted teaching regarding Effects of junk foods on health among Adolescent children.

#### **OBJECTIVES OF THE STUDY**

- To assess the pre test and post test level of knowledge regarding the Effects of junk foods on health among Adolescent children in selected school

- To evaluate the effectiveness of computer assisted teaching on the Effects of junk foods on health in terms of gaining knowledge among Adolescent children in selected school.
- To find out the association between the post test level of knowledge regarding the Effects of junk foods on health among Adolescent children and their selected demographic variables

The study attempted to examine the following research hypothesis

### **HYPOTHESIS**

- **H1:** There is a significant difference between the pre test and post test level of knowledge regarding the Effects of junk foods on health among Adolescent children.
- **H2:** There is a significant association between the post test level of knowledge regarding the Effects of junk foods on health among Adolescent with their selected demographic variables.

Extensive literature review was done for the present study and the reviews were presented in the following headings, Studies related to changing trends in adolescents eating pattern, Studies related to factors influencing junk foods, Studies related to prevalence of junk foods consumption and effects of junk foods on health among adolescent children, Studies related to the effectiveness of teaching programme on effects of junks food on health among adolescents.

The conceptual framework adopted for the present study was based on Betralanff's theory (1968) the general system theory. This theory helped the

investigator to assess the effectiveness of computer assisted teaching regarding Effects of junk foods on health among Adolescent children education students.

The research design selected for the present study was pre experimental study to evaluate the effectiveness of computer assisted teaching regarding Effects of junk foods on health among Adolescent children. The independent variable was computer assisted teaching on Effects of junk foods and the dependent variable was knowledge regarding Effects of junk food son health.

The investigator developed a structured questionnaire as a tool for the present study. The content validity of the tool was established by 5 experts. The reliability of the tool was ascertained by test retest method reliability co efficient was  $r=0.92$  and the tool was found to be reliable for the study. Pilot study was conducted in Navarasam Matriculation Higher Secondary school Palliyuthu at Erode district among 10 adolescent children, who fulfilled the sample selection criteria. The study was found to be feasible.

The main study was conducted in Kongu Kalvi Nilayam, Erode district . Prior permission from the authorities was sought and obtained. Non probability convenient sampling technique was used to select the samples and informed consent was obtained. Pretest was done to assess the knowledge of effects of junk foods on health and the computer assisted teaching was administered. After seven days of the computer assisted teaching post test was done. The data gathered were analyzed and interpreted manually. A probability of  $P<0.05$  level of significance was considered significant.

## **FINDINGS**

The major findings of the study were classified under following headings

### **1. Findings related to background factors of adolescent children**

Among the total samples majority 24(40%) belong to the age group 12-13 years, 32(53.3%) were girls, 42(70%) were Hindu, 24(40%) were studying in 8<sup>th</sup> standard, 55(91.6%) were living in nuclear family, 25(41.6%) of their parents are earning Rs 10000-Rs 12000, 21(35%) of their fathers had completed secondary school education, 24(40%) of their mothers had completed primary school education, 38(63.3%) of their fathers were doing private job, 29(48.3%) of their mothers were house wife, 51(85%) of them were not known about effects of junk food on health previously, 26(43.3%) were come to know about effects of junk food on health previously through Mass media.

### **2. Findings on Knowledge of adolescent children regarding effects of junk foods on health in pre test and post test.**

In pre test majority of adolescent children 55(91.66%) of them had inadequate Knowledge, 5(8.33%) of them had moderate adequate knowledge and none of the adolescent children (0%) had adequate knowledge. The post test knowledge scores show a significant difference ie, 12(20%) were having moderate knowledge and majority of them 48(80%) had acquired adequate knowledge from the computer assisted teaching on effects of junk food on health. It means the computer assisted teaching was effective.

### **3. Findings on effectiveness of computer assisted teaching by comparing the pre test mean, post test mean and Level of knowledge.**

In pre test the obtained overall mean score was 5.73, standard deviation was 2.9, Mean percentage was 9.55% and range was 12. The obtained overall post test mean score was 22.58 and standard deviation was 2.8, Mean percentage was 37.63% and the range was 8. The mean difference was 16.85 and the obtained t value was 29.6 which is significant at the level of 0.05. It was inferred that post test knowledge score among adolescent children significantly high when compared to pre test knowledge score among adolescent children. So the computer assisted teaching was effective.

### **4. Findings on association between post test score with their**

#### **Demographic Variables among adolescent children.**

There was no significant association between the post test level of knowledge and demographic variables among adolescent children. Computer assisted teaching was independently effective to improve the knowledge of the samples.

## **DISCUSSION**

The results of the study were discussed according to the objectives of the study

**Objective 1: To assess the pre test and post test level of knowledge regarding the Effects of junk foods on health among Adolescent children in selected school**

In pre test majority of adolescent children 55(91.66%) of inadequate knowledge, 5(8.33%) of them had moderate knowledge and none of the adolescent children (0%) had adequate knowledge. This shows that computer assisted teaching is very much needed to improve the knowledge.

In post test majority of adolescent children 12(20%) of them had moderately adequate knowledge, 48(80%) of them had adequate knowledge. This shows that computer assisted teaching is very effective to improve the knowledge.

These findings were supported by **Lt col Mercy Antony et al (2013)** conducted a cross sectional descriptive study using survey method with a sample of 208 in Pune district of Maharashtra India. The results revealed that out of 66.8% who consumed junk food, 50% of teenagers consumed junk food 3-5 times and 1-3 bottles of aerated drinks per week. 46.15% of teenagers had average knowledge about ill effects of junk food.

**Objective 2: To evaluate the effectiveness of computer assisted teaching on the Effects of junk foods on health in terms of gaining knowledge among Adolescent children in selected school**

The obtained overall post test mean 22.58, standard deviation 2.8 and the range 8, pre test , mean 5.73, standard deviation 2.9 and the mean difference was 16.85 and  $t=29.6$  was significant. The result showed that the mean post- test knowledge score 22.58 was found to be significantly higher than their mean pre- test knowledge score 5.73 as evident from 't ' value (29.6)

It was inferred the post test knowledge score was increased after the computer assisted teaching among adolescent children.

The above findings were supported by **Vandana Sharma 2013** conducted a pre-experimental study to assess the effectiveness of teaching program on knowledge regarding harmful effects of junk food among adolescents children at Jalandhar, Punjab. The results mainly found that the mean percentage of the knowledge score of post test (22.88) was higher than pre test (12.96). The difference between pre test knowledge score and post test knowledge score was 9.92. The study concluded that the education had a vital role in improving the knowledge of adolescent children regarding effects of junk food on health.



These findings were supported by **Mandeep Karur(2014)** did a quasi-experimental study on adolescents of 11 to 18 years of age in Delhi to determine the effectiveness of planned teaching programme on knowledge regarding health hazards of junk foods. The results revealed that the mean pre test score was 9.95 and mean post test score was 18.50 the mean difference between the pre test knowledge score and post test knowledge score was 8.55. The study concluded that planned teaching programme was effective in order to increase the knowledge of the adolescents.

**Objective 3 : To find out the association between the post test level of knowledge regarding the effects of junk foods on health among Adolescent children and their selected demographic variables**

There was no significant association between any of the background factors among the post test level of knowledge among adolescent children in Kongu Kalvi Nilayam.

The above findings were supported by **Massimo Santinello et –al(2009)** conducted a cross sectional survey among adolescents between 11 and 16 yrs in Belgium Flander & the Veneto region of Italy. The purpose of the study was focus on several lifestyle behaviors and family rules as determinant of soft drink consumption were limited to adolescent children. The results revealed that each

independent variables was significantly associated with daily soft drink consumption, despite some sub group.

## **IMPLICATIONS**

The findings of the study have the following implications in Nursing

### **Nursing implications**

The findings of the study have implications on the field of nursing education , nursing practice, nursing administration and nursing research.

### **Nursing practice**

- Computer assisted teaching regarding effects of junk foods on health helps to improve the adolescent children's level of knowledge on effects of junk foods on health.

- Computer assisted teaching can be used in various adolescent care centers, OPD, Community health centers, to give health education to the adolescent group.
- It helps in identifying the problems of the adolescent children suffering from junk foods
- It provides appropriate information regarding effects of junk foods on health.

### **Nursing education**

- The nurse educator have the responsibility to update the knowledge, attitude and practice of nursing students on knowledge and awareness about effects of junk foods on health.
- The findings of the study can serve as guidelines for the nurse educator for preparing computer assisted teaching for student nurse regarding effects of junk foods on health.
- The nursing students should be made aware about their role in health promotion of the adolescent suffering from health problems and prevention of junk foods related health problems.
- The students should be motivated to make up innovational approaches to provide health education regarding effects of junk foods on health in different setting.

### **Nursing administration**

- It helps the nursing administrator to prepare computer assisted teaching regarding the effects of junk foods on health to community and public.
- It helps the nurse to learn how they can reach the adolescent children, teacher education students to create awareness regarding effects of junk foods on health.
- It gives more awareness about planning budget to prepare computer assisted teaching material regarding various adolescent problems.

### **Nursing research**

- The study provides a baseline data for conducting other research studies.
- The study will be a motivation for the budding researchers to conduct similar studies in larger samples.
- The study will be a reference for the research scholars.
- Further research works can be conducted with every medical condition to identify most effective knowledge imparting strategies.

### **Limitations**

The following points were beyond the control of the investigator:

- Study is limited only those who are willing to participate in the study
- Study samples were small
- The study was limited to the experience of the researcher
- The Study was confirmed to only on selected school, which obviously imposed limits to larger generalizations.

### **Recommendations**

On the basis of the findings of the study, the following recommendations have been made:

- A similar study can be replicated on a large sample to generalize the findings.
- A similar study can be conducted to find the differences in the knowledge level of the adolescent children on the basis of various institutional settings such as government and private institutions, state board and matriculation school.
- A similar study can be conducted to find differences in the knowledge level of the adolescent children studying in the schools located in urban and rural areas

- A similar study can be conducted to find differences in the knowledge level, attitude and practice

## **CONCLUSION**

The following conclusions were drawn from the findings of the study. Computer assisted teaching method was an effective method of giving information to people. This method helps for easy understanding and gives more awareness about effects of junk food on health among adolescent children.

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Why Humans Like Junk Food - James Clear

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Encyclopedia of Junk Food and Fast Food

[www.books.google.co.in /Diet & Nutrition/Food Content Guides](http://www.books.google.co.in/Diet%20%26amp%20Nutrition/Food%20Content%20Guides)

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Fast Food's Immediate Damage to Your Health

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[articles.mercola.com/sites/articles/ junk-food-marketing-children.aspx](http://articles.mercola.com/sites/articles/junk-food-marketing-children.aspx)

Effects of Junk Food on Health

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## **APPENDIX -I**

### **LETTER SEEKING PERMISSION TO CONDUCT MAIN STUDY**

Date :-----

**To**

**Mrs.T.Nathiya**

**Principal**

**Kongu Kalvi Nilayam**

**Matriculation Higher Secondary School**

**Rangampalaym, Erode**

**Respected Sir,**

Sub: Requisition to avail the permission to conduct project – Reg...

Greetings from Shivaparthi Mandradiar Institute of Health Science, Tirupur.

This is to certify that Reg No. 301317102 is a bonafide student of our college studying M.Sc. Nursing II year in the academic year of 2014-2015. As part of the M.Sc Nursing Curriculum prescribed by the Tamilnadu Dr. M. G. R. Medical University, Chennai, she needs to conduct a project and she is willing to do at your esteemed institution. So, kindly do the needful and grant her permission to conduct the study.

The details of the project will be briefed to you by her in person.

Thanking you

Yours

sincerely,

(PRINCIPAL)

## **APPENDIX -II**

G.O.M.S.No. : 40 dt : 05.02.2007

**SHIVPARVATHI MANDRADIAR INSTITUTE OF HEALTH SCIENCE**  
(COLLEGE OF NURSING)



Palayakottai (Po) Tirupur (Dt) - 638 108. TamilNadu.

Tel : 04257-242200, 241800, Mobile : 94860 33000 Fax : 04257-242200

E-Mail : spmihs@gmail.com. Web : www.spmihscollegeofnursing.org

(Recognized by Indian Nursing Council, Tamilnadu Nurses & Midwives Council, Affiliated to The TamilNadu Dr.M.G.R.Medical University)

Date : .....

To

Mrs.T.Nathiya  
Principal  
Kongu Kalvi Nilayam  
Matriculation Higher Secondary School  
Rangampalayam, Erode

Respected Madam,

Greetings from Shivparvathi Mandradiar Institute of Health Sciences,  
Tirupur.

**Sub:** Requisition of avail the permission to conduct project – Regarding.

This is to certify that **Mrs.Beulah Daniel.B** is the bonafied student of our college studying M.Sc(Nursing) II-Year in the academic year of 2014-2015. As part of the M.Sc Nursing curriculum prescribed by the TamilNadu Dr.M.G.R.Medical University, Chennai, She need to conduct a project and she is willing to do at your institution. So, kindly do the needful and grant her permission to conduct the study.

The details of the project will be briefed to you by her in person

Thanking you

*Permitted*  
*Nathiya*  
PRINCIPAL,  
KONGU KALVI NILAYAM  
MATRIC HR. SEC. SCHOOL,  
RANGAMPALAYAM, ERODE-9.

*N. Sankaranarayanan*  
Yours sincerely

PRINCIPAL  
SHIVPARVATHI MANDRADIAR  
INSTITUTE OF HEALTH SCIENCES  
PALAYAKOTAI-638 108.

## **APPENDIX – III**

### **LETTER SEEKING EXPERTS OPINION FOR THE CONTENT VALIDITY OF THE TOOL USED FOR THE STUDY**

**From**

301317102,  
M.Sc Nursing 2<sup>nd</sup> year,  
SPM college of nursing,  
Palayakottai,  
Erode .

**To**

**Forward through**

The Principal,  
SPM College of Nursing,  
Erode.

**Respected Sir/Madam,**

**Sub:** Requisition for expert opinion and suggestion for content validity of the tool.

I am, 301317102 Post graduate student in Peadiatric Nursing , Shivparvathi Mandradiar College of Nursing affiliated to The Tamilnadu Dr. MGR Medical University, Chennai. As a partial fulfillment of the M.Sc Nursing programme, I have selected the following topic for the research.



**Topic:** *“A study to evaluate the effectiveness of computer assisted teaching on the level of knowledge regarding the effects of junk foods on health among adolescent children in a selected school at Erode District.”*

I hereby, enclose the following documents for your kind reference

1. Introduction
2. Statement of the problem
3. Objectives of the study
4. Operational definition
5. Research methodology
6. Structured questionnaire.

Hence, I request you to kindly examine the tool item wise and give your valuable opinion and suggestions for improvements of this tool.

Kindly sign the certificate of validation stating that you have validate the tool, Your kind co-operation and expert judgment will be very much appreciated and gratefully acknowledged.

Thanking you

**Date:**

**Place:** Palayakottai.

Your's sincerely,

**(301317102)**

## **APPENDIX –IV**

### **LIST OF EXPERTS**

**1. Dr. S. A. Nassir MD (Paed)**

Nassir Nursing Home  
Gandhiji Road  
Erode.

**2. Mrs. Suganthi Joseph M.sc (N)**

Principal  
Mookambigai College Of Nursing  
Trichy.

**3. Mrs. S. Santhi M.sc(N)**

Reader  
Thanthi Roever College Of Nursing  
Perambalur.

**4. Ms.Suganthi M.sc (N)**

Lecturer  
SPMIHS( College Of Nursing)  
Palayakotai.

**5. Mrs. Jhancy Nirmala M.Sc.,M.Phil.,**

Food and Nutrition – Lecturer  
Erode.

## **APPENDIX – V**

### **CONSENT FORM FOR STUDY PARTICIPANTS**

I, give my consent to participate in the research titled, **“A study to evaluate the effectiveness of computer assisted teaching on the level of knowledge regarding the effects of junk foods on health among adolescents children in a selected school at Erode District.”** which is being conducted by 301317102, II Year M.Sc (N) Shivparvathi Mandradiar College of Nursing.

## **APPENDIX – VI**

### **STRUCTURED KNOWLEDGE QUESTIONNAIRE**

**Code No:**

**Instruction:**

This section deals with the demographic variables of respondents. The interviewer will pose questions listed below and place a tick mark against the correct answers.

#### **Section I- Demographic Data**

##### **1) Age**

- a) 12-13yrs
- b) 13-14yrs
- c) 14-15yrs
- d) 15-16yrs

##### **2) Sex**

- a) Boy
- b) Girl

**3) Religion**

- a) Hindu
- b) Muslim
- c) Christian
- d) Others

**4) Class of studying**

- a) 8<sup>th</sup> std
- b) 9<sup>th</sup> std
- c) 10<sup>th</sup> std
- d) 11<sup>th</sup> std

**5) Type of family**

- a) Joint family,
- b) Nuclear family
- c) Extended family

**6) Family income**

- a) Below Rs 5000
- b) Rs 5000-10000
- c) Rs10000-12000
- d) Above Rs15000

**7) Education of the father**

- a) Illiterate
- b) Primary school education
- c) Secondary school education
- d) Graduate& above

**8) Education of the mother**

- a) Illiterate
- b) Primary school education
- c) Secondary school education
- d) Graduate& above

**9) Occupation of the father**

- a) Government job
- b) Private Job
- c) Business
- d) Collie

**10) Occupation of the mother**

- a) Government
- b) Private Job
- c) Collie
- d) House wife

**11) Do you know about the effects of junk food on health previously?**

- a) Yes
- b) No

**12) If yes, sources of information**

- a) Mass media
- b) Friends
- c) Health care professionals
- d) Others

## **Section II**

### **Structured knowledge questionnaire regarding Effects of junk food on health**

#### **A. QUESTIONS RELATED TO CONCEPT OF JUNK FOOD**

**13) What is junk food?**

- a) Food that is calorie dense and nutrient poor
- b) Healthy food
- c) High fat and nutritional value
- d) all of the above

**14) Junk food contains**

- a) High carbohydrates and proteins
- b) High amount of calories, fat, and sugar
- c) High amount of water
- d) Low in fat

**15) Which among the following is junk food?**

- a) Vegetable salad
- b) Chips & cookies
- c) Dry fruits
- d) Milk



**16)What is the reason for people to consume more junk food?**

- a) Peer pressure
- b) Attractive packages
- c) Taste
- d) All of the above

**17)Do you think the consumption of junk food is influenced by mass media?**

- a) Yes
- b) No

**B .QUESTIONS RELATED TO EFFECTS OF JUNK FOOD CONTENT ON HEALTH**

**18) Which content of the junk food causes dental cavities?**

- a) Fat
- b) Dense sugar
- c) Protein
- d) Do not know

**19) What is the effect of high sodium level in the junk food?**

- a) Increase blood pressure
- b) Diabetic
- c) Heart disease
- d) Do not know

**20) What predisposes to develop heart disease among children in future?**

- a) High content of Tran's fat
- b) Low content of Tran's fat
- c) Low protein
- d) Do not know

**21) Accumulation of cholesterol causes**

- a) Thickening of the arteries
- b) Kidney disease
- c) Diabetic
- d) None of the above

**22) How artificial colouring and flavouring added in the food affects the health?**

- a) Causes allergic asthma & rashes
- b) It activates nervous system
- c) Produces poor concentration
- d) Do not know

**C .QUESTIONS RELATED TO ILL EFFECT S OF JUNK FOOD ON HEALTH**

**23) What is the major effects of junk food?**

- a) Obesity
- b) Digestive & cardiac problems
- c) Acne
- d) all of the above

**24) Obesity is caused by**

- a) Over consumption of food
- b) Lack of fiber
- c) Excessive calorie intake
- d) all of the above

**25) Peptic Ulcer means**

- a) Ulcer of the GI tract
- b) Ulcer of the oral cavity.
- c) Ulcer of the mucous membrane
- d) None of the above

**26) Which among the following junk food causes ulcer?**

- a) Ice cream
- b) Pizza and chips
- c) Jams
- d) Chocolates

**27) What is lacking in junk food?**

- a) Family gathering
- b) Satisfaction
- c) Appetizer
- d) All of the above

**28) Identify junk food which causes stress**

- a) Fat contain food
- b) Water contain food
- c) Calorie contain food
- d) Caffeine contain food

**D.QUESTION RELATED TO EFFECT OF JUNK FOOD ON HUMAN BODY**

**29) What is the effect of deep fried junk food on Neurological System?**

- a) Brain Damage
- b) Parkinson's Disease
- c) Alzheimer's disease
- d) Do not know

**30) What happens by consumption of processed junk food?**

- a) Depression
- b) Body become active
- c) Low blood pressure
- d) Aggression & irritability

**31) Which preservatives used in fast food causes brain cancer & tumor?**

- a) Sulphites
- b) Nitrites
- c) Teratogens
- d) Refined sugars

**32) What chronic impairment on respiratory system is caused by junk food?**

- a) Dental caries
- b) Asthma
- c) Renal calculi
- d) Do not know

**33) What is the chronic effects of junk food on digestive system?**

- a) Colon cancer
- b) Diarrhea
- c) Gastritis
- d) Mega colon

**34) What leads to sudden cardiac death?**

- a) Excess use of sugar
- b) Excess use of cocaine
- c) Lack of vitamins
- d) Lack of calories

**35) What happens due to ill effects of consuming junk food during pregnancy?**

- a) Health of next generation
- b) Health of mothers
- c) Health of father
- d) Health of fetus

**36) Which type of food causes acne in adolescence?**

- a) Caffeinated drinks& chips
- b) Energy drinks& meat
- c) Junk food & burger
- d) Sweet food & ice creams

## **QUESTIONS RELATED TO WHY TO AVOID JUNK FOOD DURING ADOLESCENCE**

**37) During the adolescent period adolescents gain approximately**

- a) 20% of Ht & 50% OF Wt
- b) 50% of wt & 25% of Ht
- c) 25% of Ht & 20% Of wt
- d) None of the above

**38) Which among the following is caused by junk food?**

- a) Fatigue& Poor concentration
- b) Stress
- c) Fatigue
- d) Do not know

## **QUESTIONS RELATED TO RESTRICTION OF JUNK FOOD IN ADOLESCENCE**

**39) How much of calcium adolescents should consume each day?**

- a) 1300 mg
- b) 1000mg
- c) 2200mg
- d) Do not know



**40) Why adolescence try to stay away from candy & sodas?**

- a) To prevent dental problems
- b) To keep stomach empty
- c) To maintain weight
- d) To maintain dignity

**41) Which among the following is brain food for the adolescence to improve concentration?**

- a) Vegetables & dairy products rich in Vitamin D, Vitamin B and Iron
- b) Ice creams
- c) Dried foods
- d) Fresh food

**42) How to avoid habit of consumption of junk food?**

- a) Develop a taste for health promoting drinks & juices
- b) Develop a taste for health promoting nuts & cereals
- c) Develop a taste for health promoting meals & foods
- d) Develop a taste for health promoting fruits & vegetables.

## ANSWER KEY

Question No.	Answer	Question No.	Answer
1	a	16	d
2	b	17	a
3	b	18	d
4	d	19	b
5	a	20	b
6	b	21	a
7	a	22	b
8	a	23	d
9	a	24	a
10	a	25	a
11	a	26	a
12	d	27	a
13	a	28	a
14	b	28	a
15	d	30	d

S.No	SCORE	LEVEL OF KNOWLEDGE
1	0-10	In Adequate knowledge
2	11-20	Moderately Adequate knowledge
3	21-30	Adequate knowledge

## **APPENDIX - VII**

### **CONTENT OF TEACHING**

**Topic:** Effects Of Junk Foods On Health

**Group:** Adolescent Children

**Place:** Kongu Kalvi Nilayam Matriculation Hr.Sec. School, Erode

**Duration:** 45 mts

**Method Of Teaching:** Computer Assisted Teaching

**Teaching Aid:** Power Point Presentation

**Objective:** The adolescents will be able to

1. Acquire knowledge about the effects of junk foods on health
2. Develop positive attitude toward the restriction of junk foods
3. Identify the ill effects of junk foods on health

Time	Specific Objectives	Contents	A.V.Aids	Teaching Activity	Learning Activity	Evaluation
1Mint	Enumerate about junk food	<p style="text-align: center;"><b><u>INTRODUCTION</u></b></p> <p>Junk food is food that is calorie dense and nutrient poor. In recent decades, junk food, fast food and convenience food consumption in the country have increased dramatically, with 25% of people now consuming predominantly junk food diets. This trend has occurred concurrently with rising epidemics of numerous chronic diseases and accounts for a long list of reason why eating junk food is bad.</p>	P O W E R			
2Mints	To Define junk food	<p style="text-align: center;"><b><u>DEFINITION</u></b></p> <p>Junk food is defined as “Food that is of little nutritional value and often high in fat, sugar and calories”.</p>	P O I N T	The teacher define the term junk food	Listening Attentive	What is junk food?
3Mints	Mention about the contents of junk food	<p style="text-align: center;"><b><u>WHAT JUNK FOOD CONTAINS</u></b></p> <p>Junk foods are known for the high amount of sugar present in them <b>High</b> in calories. Food items such, as chips, cookies, candy bars, muffins fried foods etc, contain high amount of</p>	P O W E R	The teacher mention about the content of junk food	Discussion	What are all the content of junk foods?